REMARKS

Claims 1-16 and 60 were canceled without prejudice or disclaimer of the subject matter recited therein. Claims 17-59 were withdrawn from consideration. New claims 61-71 were added. Claims 17-59 and 61-71 are pending. The rejections set forth in the Office Action are respectfully traversed below.

Rejections under 35 USC §103

Claims 1, 2, 6-9, 11, 15, 16, and 60 were rejected under 35 USC §103 over **Meisburger et al.** (USP 5,665,968) in view of **Hamashima et al.** Claims 3 and 5 were rejected under 35 USC §103 over **Meisburger, Hamashima,** and further in view of **Davis et al.** (USP 4,911,103) and **Lo et al.** (USP 6,344,750). Claims 4, 10, 12, and 14 were rejected under 35 USC §103 over **Meisburger** in view of **Lo**. Claim 13 was rejected under 35 USC §103(a) over **Meisburger** in view of **Petric** (USP 4,607,167).

These rejections under 35 USC § 103 are now moot since claims 1-16 and 60 were cancelled. However, the prior art rejections will be addressed in view of replacement new claims 61-71 which correspond to the previously elected invention of Group (I). It is submitted that the cited prior art does not teach or suggest the present claimed invention of new claims 61-71 for the following reasons.

1. Carrying Mechanism

Claims 61-63 and 67-71 distinguish over the prior art by reciting a carrying mechanism having a mini-environment chamber that supplies a clean gas as a laminar downflow to the object to be inspected to prevent dust from contacting to the object to be inspected, and wherein the mini-environment chamber includes a gas supply unit including a cleaning filter such as HEPA or ULPA filter for creating the clean gas.

Regarding this point, the Examiner pointed out that **Davis** discusses the problem of dust adhering to a wafer as the loading chamber is evacuated and teaches that it occurs whenever wafers are transferred into a vacuum chamber through a loading chamber, and further teaches solving the problem by supplying a clean gas to the wafer.

However, what is disclosed in **Davis** is similar to that discussed on page 76 of the text of the present invention, which refers to a purging of the loading chamber. The purpose of the purging is to prevent oxygen gas or an other non-inert gas, in particular, a water vapor, from adhering to the surface of a wafer. To this end, a purge with dry nitrogen or other clean gas is supplied into a vacuum load lock chamber, wherein a wafer cassette is accommodated.

This is quite different from the features of the present invention, where a clean gas, which is created by passing through the cleaning filter such as HEPA or ULPA filter, is supplied as a laminar downflow to the object to be inspected, e.g. a wafer, to prevent dust from contacting the object to be inspected.

More specifically, **Davis** discloses a loading chamber or a load lock chamber where a specific type cassette, i.e. a vacuum wafer carrier, is adopted. Thus, in **Davis**, it is not possible to adopt a

general-purpose type cassette like SMIF or FOUP type cassette or a wafer container, because the general-purpose type cassette can not keep vacuum condition in it.

The construction of **Davis** corresponds to what is shown in Appendix A (Fig. 2) attached to this Amendment. That is, in **Davis**, an atmospheric transferring system is omitted from the construction of the present invention (e.g., shown in Fig. 1 of the present application) and the vacuum wafer carrier is directly attached to the load lock chamber or a loading chamber.

When a general-purpose type cassette like SMIF or FOUP type cassette is used, an atmospheric transfer system such as a mini-environment chamber is indispensable between the loading chamber and the cassette, as shown in Fig. 2(A) of the present invention (see marked-up version attached as Appendix B to this Amendment). However, in an atmospheric transfer system, and in particular when it is adopted in an inspection apparatus, it is necessary to strictly prevent dust from adhering to a wafer and, to this end, a clean gas as a laminar downflow which has passed the cleaning filter such as HEPA or ULPA filter is supplied to the surface of the wafer to maintain cleanness of the wafer.

None of the cited references, either alone or in combination, discloses or suggests these features. For at least these reasons, the present claimed invention patentably distinguishes over the prior art.

2. Alignment Controller

Claims 2, 4-5 and 7-11 further distinguish over the prior art by reciting an alignment controller that includes an optical microscope for effecting rough alignment of the object to be

inspected in a wide field before a high magnification alignment for inspection is made by an electron-optical system.

Rough alignment of the object to be inspected by the use of the optical microscope is discussed in the present specification on page 146, line 10 - page 147, line 15. The purpose of rough alignment of the wafer at a low magnification is to readily detect an alignment mark by means of an electron beam when the wafer is aligned, by observing patterns on the wafer in a small field using the electron-optical system for inspecting patterns on the wafer. Thus, rough alignment of the object to be inspected by the optical microscope, which is made under a low magnification, makes alignment by the electron-optical system for inspection, which is made under high magnification, easy.

Regarding this point, the Examiner pointed out that alignment of the object to be inspected in **Meisburger** includes rough alignment performed in a mini-environment space (lines 7-25 in column 19).

However, the portions of **Meisburger** relied on by the Examiner do not refer to "rough alignment of the wafer" or the use of the optical microscope at all, and only discuss a wafer handler in common use. For at least these further reasons, the present claimed invention patentably distinguishes over the prior art, either alone or in combination.

3. Vacuum Pump

Claims 3 and 5-11 further distinguish over the prior art by reciting the vacuum exhausting system comprising a vacuum pump including a turbo molecular pump as a main exhaust pump and a dry pump of a Roots type as a roughing vacuum pump, and an interlock mechanism, wherein the vacuum level of the working chamber is monitored; and in the case of irregularity, the interlock

mechanism executes an emergency control to secure the vacuum level at a safe level. These features are explained on page 148, line 24 - page 149, line 12 of the present specification.

By provision of the dry pump, the working chamber is kept in an oil free condition; i.e. there is no risk that oil vapors will flow back into the working chamber. Also, by the provision of the interlock mechanism, a vacuum level in the working chamber is kept at a safe level irrespective of irregularity of the inspection apparatus. These features are neither taught nor suggested by any of the cited references, either alone or in combination. For at least these further reasons, the present claimed invention patentably distinguishes over the prior art.

In view of the aforementioned amendments and accompanying remarks, Applicant submits that that the claims, as herein amended, are in condition for allowance. Therefore, entry of this Amendment is respectfully requested to place the present application into condition for allowance.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

John P. Kong
Attorney for Applicant
Reg. No. 40,954

JPK/jli

1250 Connecticut Ave, N.W.
Washington, D.C. 20036
(202) 822-1100

Enclosures: Appendices A and B

APPENDIX A

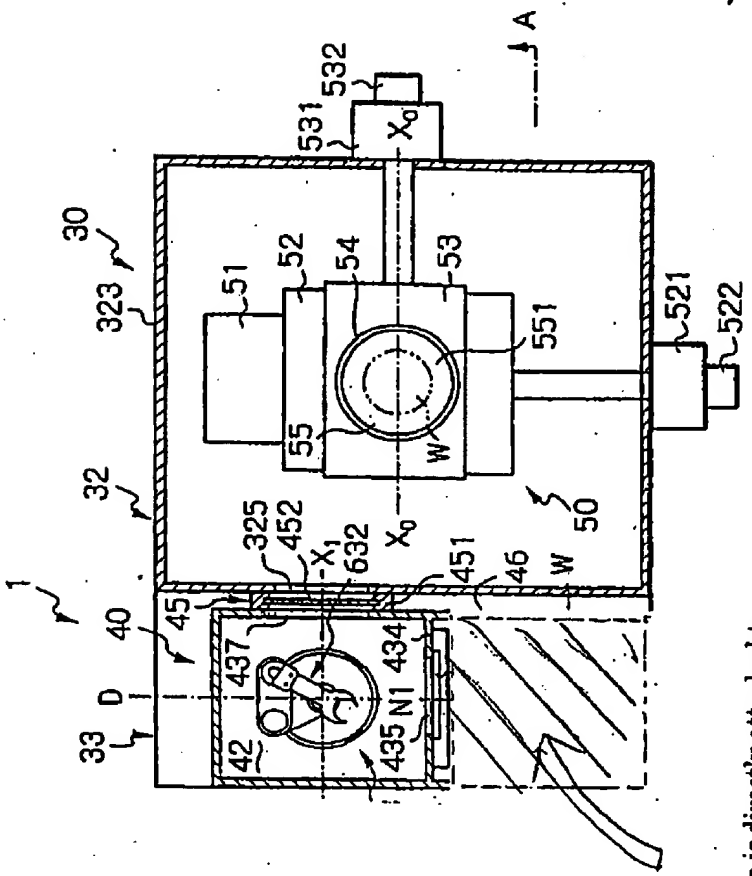

Fig. 2

Vacuum Wafer Cassette is directly attached to Load Lock chamber /Loading chamber.
General-purpose Cassette (e.g. SMIIF or FOUP type) can not be used.

APPENDIX B

Fig. 2 (A)